Waukesha County
Wisconsin

Land Use Planning Report
# TABLE OF CONTENTS

I. FOREWORD ................................................................. 1

II. ORGANIZATION AND PROCEDURE ..................................... 3

III. DESCRIPTION OF DESIGNATED AREAS. .............................. 5

IV. LAND USE PROBLEMS AND RECOMMENDATIONS. ....................... 9

  Class A - Farm Land to be Retired .................................. 9
  Class B - Wood and Swamp Land ..................................... 12
  Class C - Questionable Farm Land ................................... 13
  Class D - Land which can be Developed .............................. 15
  Class E - Arable Farm Land .......................................... 17

V. TECHNICAL PROBLEMS ASSOCIATED WITH CLASS E FARM LAND ........ 18

  Grade 1 - Phosphate, Drainage, Shift in Crops, Weed Control ...... 18
  Grade 2 - More Alfalfa, Equipment, Shift in Crops ................ 19
  Grade 3 - Fertilizers, Humus, Wind Erosion Control ................ 19

VI. LOCAL ECONOMIC PROBLEMS - ARABLE FARMS ....................... 22

  Size of Business too Small .......................................... 22
  More Home Produced Foods Needed ................................... 23
  Higher Productivity Needed ......................................... 24
  Diversity of Farm Income Satisfactory .............................. 24

VII. LONG TIME PLANNING .................................................. 25

  Area II 1 - Recreational District .................................... 25
  Area II 2 - Non-Commercial Country Life Farming .................. 27
  Area II 3 - Commercial Farming - Prairie Soil ...................... 28
  Area III - Forestry - Hunting - Farming ............................ 29

VIII. EXTERNAL ECONOMIC PROBLEMS ASSOCIATED WITH FARMING ........... 30

IX. STATISTICS - SUPPORTING EVIDENCE ................................ 31

  Waushara County Growing Season Rainfall ........................... 31
  Temperature Causing Droughts ........................................ 31
  Relief Aids ............................................................ 32
  Farm Tenancy Per Cent ................................................ 32
  Trend and Size of Farm Business .................................... 33
The future of Waushara County will depend, as in the past, on how the land can best be made to work for its citizens. We are now going through a period of transition, when action must be considered and planned by as many qualified persons as possible.

The desires of men have always, and probably always will, determine land uses. Before the World War, when our population was continuing to increase, when we had practically an unlimited foreign outlet, and most everyone was employed, there was a desire among all farmers to put as much of their land into farming as time and finances permitted. These conditions have now changed and farmers feel that much of the land which they broke would have been better left into timber and much of the marsh which they drained should have been left in its natural state. The attitude toward life has also changed in these thirty years. The land was first being farmed to build a home, then it was farmed for the purpose of buying an automobile. This last objective in farming has resulted in ramshackled houses, leaning barns, poor fences, wind-eroded fields, and the absence of landscaping around the homestead. There is at present a trend away from the expensive automobile and toward building a farm home and rebuilding the soil. (This is especially true among the young men who are starting in farming.) There is another desire or attitude about life which has had much to do with land uses. -- There used to be a feeling among men that the accumulation of money was the most desirable measure of success, -- the school readers used to set up this kind of goal for its young men, -- the teachers could have informed the pupils that there wasn't a million dollars for each of them, and for that reason they could not all be successful, if those were the standards. Today success is measured more in terms of social achievement than in money.

To create a desire among men to have a productive soil and the kind of a home to which the youngsters will want to hurry home from school, and which the farm women can spend the whole day without becoming embittered, is the goal of land use planning.

From 1894 to 1910, when most of the soil was highly productive potato land and when it was being most rapidly depleted, Waushara County farmers were among the most prosperous in the state. An earlier generation of wheat farmers had likewise "skinned" the open prairies of their virgin fertility. But today due to competition from farmers in other parts of the nation, to soil depletion, wind erosion, drought, and low prices, the county is in financial difficulty.

It is true that there is a wide difference in the living standards of the individual farmers in the county, but it is also true that practically all the farmers in the county are having difficulty in earning enough farm income, year in and year out, to:
(a) provide the farm family with an adequate living;
(b) maintain the farm plant and pay reasonable returns on the investment;
(c) pay its proportionate share of the cost of reasonable good public services.
The fact that it is costing the public over $100,000 of relief money a year to help support many formerly self-sustaining farmers in this county; and the fact that most of these farmers live on that land which this committee has classified as non-agricultural or questionable for farming, is substantial evidence that the public can no longer shut its eyes to the fact that its occupants should be putting much of the land to a better economic - hence, social use. Most of these farm families suffered severe hardships before they accepted relief, others have secured loans to operate uneconomic farms, so that extension of credit was merely another way of extending relief. Many have been victims of drought. But the great majority are in distress, either because they have been farming unproductive lands, or because they have been following methods which could be successfully continued only with a relatively higher agricultural price level in comparison with industrial prices.

The Waushara County Land Planning Committee has for the past eight months been working together in an intensive study of how the average farmer and other residents living in Waushara County might provide a better living for their families through a wiser use of the land and other resources, and through a wiser use of the services and finances of the local, state, and federal government.

This report first divides the county into three natural divisions and then shows a classification of the land within each area as to its best future use.

It contains an appraisal of the present land uses and natural resources and makes recommendations of steps which should be taken in order to realize the objectives of every good farmer.

This report should act as a guide for the coordination of the various public agencies which are at work in the county.

Individual farmers have always made individual plans for their own farms for the future, but group planning for individual and public action thereon is now in Waushara County. Whether this new kind of agricultural planning be brief or prolonged - simple or detailed - directed toward action of tomorrow, or that of ten years from tomorrow - the essence of planning is thinking ahead --

This committee is firmly convinced that the progress and prosperity of Waushara County depends on the individual progress and prosperity of those who get their living from the soil, and is vitally interested in helping to develop a program which will enable an average farmer to go ahead, --

Fred Weymouth, Chairman
II
ORGANIZATION AND PROCEDURE

The Land Use Planning Project in Waushara County was sponsored by the County Agricultural Committee.

The Agricultural Committee selected a county land use planning committee from the various agricultural agencies in the county and ten leading farmers from each of the temporary agricultural communities which they set up. They selected J. R. Weymouth to act as chairman of the committee, and county agent E. A. Jorgensen to act as secretary.

The personnel of the county committee is as follows:

Member legal County Agricultural Committee--
Representative of County Agr'l Conservation Association--Dan W. Davies
Farm Security Administration--E. D. Darlington
District Forester of the Wis. Conservation Commission--Clyde T. Smith
Commercial forest land owner--Will D. Kimball
County Highway Committee--E. S. Hamilton
Smith Hughes--V. E. Richter
Hancock Experiment Station--A. R. Albert
4-H Club Federation Leaders--Elmer Wadrey
Homemakers Clubs--Mrs. Glenn Detlor

Ten farmer members--Mrs. Burnett Johnson
Mrs. Albert Beutler
Vilas Follett
Albert Mundinger
George Hoeff
W. L. Wilson
Allie Drexler
Joe Piechowski
Burnett Johnson
James Buchanan
Glenn Detlor
H. N. Haferbocker
Arthur Johnson
E. A. Jorgensen

County Agricultural Agent--
Public Welfare Department--
Secretary--

The county land use planning committee met early in the year with Walter A. Rowlands, the state land use planning leader, and Ray Pellett, the district extension supervisor, and reviewed the objectives of land use planning, and procedures to be followed in making the land use classification map and in preparing this report.

They instructed the secretary to prepare as much county and township basic informational material as possible and put it in map and chart form; and this material be used in conducting township meetings where all of the farmers in the township would be invited. They also decided to hold an election before the close of each of these meetings for the purpose of selecting a township committee to assist the county committee with the land classification of their respective town and to make suggestions as to recommendations for the future.
The following township committees were elected:

BLOOMFIELD
Albert Mundinger
Louis Wendt
Martin Koehler
Emil Bartel
Paul Steinke
Clarence Koehler

DEERFIELD
S. R. Bray
James Searles
Morland Spaulding
Harry Chilsen
Rolland Eager

MARION
Col. Ellsworth
Jay Egan
Martin Mushall
Oscar Thorstad
Ed. Steinke

PLAINFIELD
Fred Weymouth
John Indermuehle
Albert Urban
Irving Bartels
Glenn Walker

ROSE
Dan W. Davies
Ed. Newton
John Swendrzynski
Carl Zeleers
Elmer Williams

WARREN
Joe Piechowski
Wm. Decker
Cliff Finnerty
Ed. Jones
Harry Paulson

The town assessor and a member of the A.A.A. Community Committee were represented on all of the above township committees and generally a young farmer was included.

On the average these township committees met three times. They used a town map and a plat book in classifying the land in accordance with the instructions provided with the work outline No. 1 E.A.E.-U.S.D.A. In classifying
the land there was generally a discussion about the history of each tract as well as its present condition and what the committee thought was its best future use. The Secretary made both written and mental notes of the conversation which took place and incorporated these ideas into this report.

Joint township committee meetings were held in each of the designed farming areas for the purpose of discussing the recommendations for their particular area before they were presented to the county committee.

The county committee had two meetings at which times the map and various proposals in this report were discussed. All of the recommendations made were unanimously adopted by vote of the county committee.

III
GENERAL DESCRIPTION OF DESIGNATED AREAS

Waushara County is located a little to the south of the central part of Wisconsin, and covers an area of 643 square miles.

Waushara County was settled largely by Eastern people, augmented by a mixed population of Germans, Welsh, English, Danes, Norwegians, Poles and Swedes. Most of those came from the adjoining counties to the south and east; a few came directly from the Eastern States and Europe. Nearly all were home-seekers who began to till the land as soon as they settled upon it. The Germans, who first settled the northeastern corner township, are now the predominant stock.

The area of the county may be divided into three natural divisions:

<table>
<thead>
<tr>
<th>Plainfield</th>
<th>Oasis</th>
<th>Rose</th>
<th>Springwater</th>
<th>Saxeville</th>
<th>Bloomfield</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hancock</td>
<td>Deerfield</td>
<td>Wautoma</td>
<td>Mt. Korris</td>
<td>Leon</td>
<td>Poy Sippi</td>
</tr>
<tr>
<td>III</td>
<td>II_2</td>
<td>II_1</td>
<td>I</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Coloma</td>
<td>Richford</td>
<td>Dakota</td>
<td>Marion</td>
<td>Warren</td>
<td>Aurora</td>
</tr>
</tbody>
</table>

The eastern division, Area I, borders on Lake Poygan and includes the three eastern townships, the southeast corner of Leon, the eastern half of Warren, and that part of Saxeville lying east of County Trunk E. The topography of this division is level to gently rolling, and most of the land is good and under cultivation and highly improved. The drainage is eastward into Lake Poygan with the exception of a small corner in the southeast part of Aurora where the Fox River flows.
With the exception of the two northern tiers of sections of Bloomfield the soils in this area are either of the Poygan or Superior series.

The Poygan soils are essentially the same as the Superior soils, with the difference of a considerable amount of organic matter accumulated through the growth of vegetation, the decomposition and loss of which has been, to a considerable extent, prevented by the wetness of the soil. The total amount of phosphorus is comparatively low, but the other elements, potassium, nitrogen, and organic matter occur in large amounts. In fact, so far as fertility is concerned, phosphorus is probably the only element which will require much serious attention. The surface soils are frequently quite acid, but this will not reduce their fertility on account of the fact that there is a good supply of organic matter; and except where clover or alfalfa are to be grown, the use of lime will not be necessary, as a rule. Some of this land is not at present sufficiently drained, and it is too heavy in texture to permit the most satisfactory growth of alfalfa. Where an effort is to be made, however, to grow this crop, determinations of acidity should be made and lime applied if an acid condition is found. The subsoil of both of these types if well supplied with lime carbonate, and except for moderate application in starting alfalfa, liming will not be necessary. The Poygan soils have a high organic content and are not in need of green manuring crops to supply nitrogen. Such crops, however, if turned under would loosen the soil and thus assist in establishing better tilth.

The central division, Area II, embraces a series of glacial hills, lying in the Fox River Valley, crossing the area from the Wisconsin River Valley nearly to Bloomfield, Poy Sippi, and Aurora townships. It is made up of numerous hills, pot-hole depressions, and narrow, irregular ridges and valleys. The hills vary in height from 30 to 100 feet or more about the Wisconsin River Valley. This rough, rolling topography is most pronounced in the northern part, and breaks up into more gentle slopes and more open valleys southward and eastward. The largest of these valleys - lying almost entirely within Oasis township - was doubtless at one time a lake with its outlet to the southwest. The many streams flowing through these fields now drain this division. Many beautiful lakes are scattered throughout this belt; and areas of muck are found along most of the streams. The soil for the most part is very sandy and numerous granitic glacial boulders are scattered over its surface.

In chemical composition these sandy soils show loss of practically all the important elements than do upland silt or clay loam soils. The total phosphorus in the 3-inch surface of this group of sandy soils averages about 800 pounds per acre, while in the silt loam and clay loam soils there are approximately 1,050 pounds of this element. The total amount of potassium in the surface 6 inches of the sand soils of Waushara County is, in round numbers, approximately 21,000 pounds per acre, while that in the heavier soils is approximately 45,000. The total amount of organic matter in sandy soils is about one half of that in the light colored silt and clay loam soils.

Since Potashum sandstone is the source of essentially all of these soils, they are very low in lime carbonate, having less than one half of the amount contained in the surface soils of the limestone section of the state; and the subsoils of this group have less than one-tenth of the amount usually found in the subsoils of the eastern division. It is evident, therefore, that these soils have less of all the essential elements required by plants than is contained in heavier and more fertile soils. They have, of course, certain advantages for special crops, and it is possible to profitably supplement their natural supply of plant food material by the use of fertilizers.
This division, for the purpose of making it easier to make recommendations as to its best uses, has been subdivided into:

Area II₁, which includes the townships of Springwater, Mount Morris, Arion, and all of Leon excepting the southeast corner, and the western half of Arron.

Area II₂ is composed of the townships of Dakota, Richford, Wautoma, Deerfield, and all of Rose excepting the western tier of sections.

Area II₃ which is that part of Oasis known as the "Big Prairie" which comprises the western tier of sections of the town of Rose, and all of the town of Oasis excepting the western tier of two sections.

Of a total of 17,600 acres of Waukesha sandy loam there is over 12,000 acres of it in this area which is known as the "Big Prairie". Similar areas of this soil are found in Plainfield and Coloma.

The surface soil in Waukesha sandy loam consists of 8 to 15 inches of dark brown to black sandy loam of medium texture and is comparatively rich in organic matter. It is underlain to a depth of 24 inches by a brownish-yellow, gravelly, sandy loam, becoming lighter in color to 36 inches. From 36 to 48 inches the subsoil is a yellowish, heavy, gravelly sandy loam. In places the subsoil to 48 inches is a yellowish sandy clay, and this is underlain by a yellowish, sandy, gravelly loam. Along the margin of the area of this soil the surface frequently becomes somewhat lighter in color, owing to the mixture of lighter colored material from surrounding soils.

On the "Big Prairie" the surface is level with occasional slight depressions and a few slightly elevated terraces. In places where there is a little range in elevation small gravelly, sandy ridges or knolls occur. Over the remainder of the type the surface is level to gently undulating. The natural drainage is good, and where properly cultivated this soil retains moisture very well, except where the subsoil is more sandy than usual.

The soil type as found on the "Big Prairie" has the appearance of being in old glacial lake basin, though it is probable that this region was at one time connected with, and formed a part of, the Wisconsin River Valley, and was cut off from it during glacial time by the dumping of glacial debris in the form of a moraine just east of Plainfield. The material forming the soil is in an acid condition as is indicated by soil tests and the growth of considerable sorrel.

The portion of Waukesha sandy loam in Oasis Township never supported a growth of timber. The type near Plainfield supported a scattering growth of Oaks, while the small area west of Coloma was a prairie.

The western division. Area III, embraces most of the three western townships, Plainfield, Hancock, Coloma, and two western tiers of sections in Oasis—all lying within the Wisconsin River Valley and having a level to a very gently undulating topography. Very few bowliders occur in this division, and the only sandstone outcrop covers a few square rods in Section 31 of Hancock township.

Geologists tell us that practically all of this area at one time was at the bottom of Lake Wisconsin, which later drained when the Wisconsin River cut through at the Dells.

Approximately 60,560 acres of the 70,000 acres of crop land in this area are composed of Plainfield, Waukesha and Coloma sands. These soils have as the farmers say, "no bottom" and are of very low water-holding-capacity.
These sands consist of glacial material derived chiefly from Potsdam
mudstone and deposited in this old Wisconsin River valley at a time when the
waters were flowing at a much higher level.

These soils are easily tilled, and in years of normal rainfall moderate
and good yields are obtained, except on the lighter phases. (Some of these fields
are being abandoned, after many attempts to produce satisfactory crops upon them.)
It is difficult to get a stand of clover on this land and the hay crop is always
limited. Alfalfa when properly grown gives the best results. Potatoes are the
best root crop to raise and are generally superior to those grown on heavy soils.
Sweet corn, beans and garden peas are well suited. Rye grows better than other
grains on these soils.

LAND USE CLASSIFICATION

The County Land Use Planning Committee, in an attempt to classify the
land as to its probable best future uses, suggested that a meeting be held for each
township in Waukesha County, and that at these meetings local committees be elected
by the group for each township to classify the land.

These eighteen committees have met and have classified the land into the
following classifications, indicated by the use of the following colors:

A - (BLUE color) - Land now in farms which are not suited for arable
farming and in which the land should be put to some other uses;

B - (GREEN color) - Land now in farms and which should not be used
for arable farming. In this class is included all of the unimproved marshes and
wetlands and farm woodlots. It is assumed that the land now covered by woods would
have been cleared and plowed years ago if it had been suitable for farming. Be-
cause every farm needs a woodlot, it is assumed that this land should stay in its
present uses;

C - (RED color) - Land now in farms and which are questionably suited to
arable farming. In this class is included all of that land which has been misused,
seriously depleted, and which should be placed in Class A (Blue) unless it is im-
mproved through the use of liming materials and the application of phosphate and
phosphatic fertilizers and the seeding of legumes, preferably alfalfa. Where farms
are colored Red, the committee feels that these farms should not remain as farming
units but should either be put into Class A (Blue), or added to an adjoining farm
which is under good management and which has equipment and financial resources to
rehabilitate the land so that it might be classed as E (Yellow) in the future;

D - (ORANGE color) - Land not now in farms but which is suitable for
development into either part-time or full-time farms. Drained peat land and muck
soils, some of which is now partially under cultivation, have been put into this
class. Most of these soils need better drainage, fertilization, and much of it
needs clearing before it can be put to its most profitable use;

E - (YELLOW color) - Land which is now in farms and which should remain
arable farming, either with or without some changes or shifts in the size and
type of farming, cropping systems, and soil conservation practices followed, or by
adjustments in the farming system. These, generally, are areas in which past farm-
ging experience has demonstrated that farms of some types can produce, under
# WAUSHARA COUNTY STATISTICAL INFORMATION

**Listed in Order of Tax Delinquency**

<table>
<thead>
<tr>
<th>Township</th>
<th>Total Tax Delinquency</th>
<th>Annual Delinquency</th>
<th>% Annual Delinquency</th>
<th>Population</th>
</tr>
</thead>
<tbody>
<tr>
<td>Plainfield</td>
<td>1503.8</td>
<td>3090</td>
<td>20.6%</td>
<td>579</td>
</tr>
<tr>
<td>Coloma</td>
<td>15132</td>
<td>2970</td>
<td>14.4%</td>
<td>1699</td>
</tr>
<tr>
<td>Hancock</td>
<td>18387</td>
<td>2610</td>
<td>13.8%</td>
<td>1977</td>
</tr>
<tr>
<td>Rose</td>
<td>18571</td>
<td>2960</td>
<td>15.7%</td>
<td>1524</td>
</tr>
<tr>
<td>Deerfield</td>
<td>16293</td>
<td>2500</td>
<td>14.7%</td>
<td>2049</td>
</tr>
<tr>
<td>Springs</td>
<td>11493</td>
<td>2160</td>
<td>15.0%</td>
<td>1458</td>
</tr>
<tr>
<td>Zion</td>
<td>12544</td>
<td>1620</td>
<td>12.6%</td>
<td>1740</td>
</tr>
<tr>
<td>Laporte</td>
<td>15835</td>
<td>1980</td>
<td>11.0%</td>
<td>2071</td>
</tr>
<tr>
<td>DeKorte</td>
<td>16939</td>
<td>1930</td>
<td>10.7%</td>
<td>2108</td>
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<tr>
<td>Ossian</td>
<td>18487</td>
<td>2060</td>
<td>11.0%</td>
<td>2160</td>
</tr>
<tr>
<td>N. Morris</td>
<td>19236</td>
<td>1930</td>
<td>10.0%</td>
<td>2177</td>
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<td>Warren</td>
<td>17860</td>
<td>1949</td>
<td>10.8%</td>
<td>2177</td>
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<tr>
<td>White</td>
<td>16496</td>
<td>1359</td>
<td>10.2%</td>
<td>2177</td>
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<tr>
<td>Richfield</td>
<td>20946</td>
<td>1560</td>
<td>7.9%</td>
<td>2177</td>
</tr>
<tr>
<td>Marion</td>
<td>18062</td>
<td>1260</td>
<td>6.9%</td>
<td>2177</td>
</tr>
<tr>
<td>Bloomfield</td>
<td>19330</td>
<td>820</td>
<td>4.3%</td>
<td>2177</td>
</tr>
<tr>
<td>Big Deer</td>
<td>17230</td>
<td>820</td>
<td>3.5%</td>
<td>2177</td>
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<tr>
<td>Alcona</td>
<td>19092</td>
<td>170</td>
<td>0.8%</td>
<td>2177</td>
</tr>
<tr>
<td>County Average</td>
<td>38727</td>
<td>38727</td>
<td>0.8%</td>
<td>2177</td>
</tr>
</tbody>
</table>
managerial ability, a normal farm price level; and under a conservational method of farming, can produce enough farm income year in and year out to make both ends meet.

The following chart indicates the acreage of each of the above classified types of land lying within each of the five (5) designated AREAS. It is agreed among most of the community committee members that they would probably classify more of the land colored yellow as red, or blue, if time permitted them to review their work.

ACREAGE TOTALS IN EACH OF THE ABOVE DESCRIBED CLASSIFICATIONS BY AREAS

<table>
<thead>
<tr>
<th>AREA</th>
<th>&quot;A&quot; BLUE</th>
<th>&quot;B&quot; GREEN</th>
<th>&quot;C&quot; RED</th>
<th>&quot;D&quot; ORANGE</th>
<th>&quot;E&quot; YELLOW</th>
<th>TOTAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>AREA I</td>
<td>1,360</td>
<td>20,540</td>
<td>3,520</td>
<td>2,840</td>
<td>63,960</td>
<td>92,220</td>
</tr>
<tr>
<td>AREA II</td>
<td>18,280</td>
<td>9,240</td>
<td>20,200</td>
<td>4,880</td>
<td>49,620</td>
<td>102,220</td>
</tr>
<tr>
<td>AREA III</td>
<td>12,840</td>
<td>2,960</td>
<td>28,360</td>
<td>4,440</td>
<td>65,680</td>
<td>109,640</td>
</tr>
<tr>
<td>AREA VII</td>
<td>1,600</td>
<td>4,440</td>
<td>-----</td>
<td>13,480</td>
<td>19,520</td>
<td>19,520</td>
</tr>
<tr>
<td>AREA III</td>
<td>14,720</td>
<td>23,430</td>
<td>-----</td>
<td>33,420</td>
<td>----</td>
<td>71,570</td>
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<tr>
<td>COUNTY TOTALS</td>
<td>48,800</td>
<td>32,740</td>
<td>79,950</td>
<td>7,720</td>
<td>226,160</td>
<td>395,370</td>
</tr>
</tbody>
</table>

IV

LAND USE PROBLEMS AND RECOMMENDATIONS

General County Wide Recommendations

Class "A" - BLUE --

The committee recommends that the land colored Blue "A" - a total of 48,800 acres, regardless of what area in which it is located, be retired from cropping or put into some form of permanent grazing or forest land. Whether or not it be suitable for grazing will depend on the ability of the soil and agronomic scientists to develop a kind of grass which will grow on light soil and be drought-resistant. If this land is to be reforested agencies and policies for accomplishment should be created.

This kind of land, which comprises 12% of the total land in farms, undoubtedly never should have been broken for farming purposes, and the members of the committee feel that if the problems connected with this kind of land can be solved that we can at the same time solve some of the social and economic problems, as will be noted from the following information:

25% of this land is now tax-delinquent;
12% of the direct relief cases live on this land;
20% of the WPA workers live on this land;
16% of those people receiving surplus commodities live on this kind of land.
All of the Farm Security Administration clients who live on this land are delinquent.
Recommended Use

Farming is probably the most competitive business in the world and it is generally conceded that the cost of production is lower on productive soils than on land which has been put into this classification. The uses which this land might be put and which the Committee feels it is more adaptable than farming are:

(1) forestry (school, private, municipal);
(2) public or private hunting grounds;
(3) public or private fishing grounds;
(4) other recreational uses.

In all large cities there are persons in all stages of wealth, (It is estimated that there are eighteen million people living within a driving radius which would permit many of them to spend their week ends in Waushara County. The concrete roads of Waushara County tap all of these metropoli), -- The first requirement of all these people is food and shelter, but people do not care to live on bread alone, -- those who can afford it like to have some place to go and something to do when they get there. They want to play, hunt, fish, and spend some time out-of-doors. Yet the central and western divisions of this county, which could provide them with one of the finest playgrounds in the middle west, insists on using their non-agricultural land for the production of food. Of course, society could tax these people who have a little extra money and pay it out in the form of grants to those living in areas such as this who need food, but nobody likes that way of redistributing the wealth. This redistribution must be made a "sporting" proposition.

Development Needs

Before the above mentioned recreational grounds can be developed the following steps must be taken:

1. Need better Fire Protection -- Neither private nor public interest will proceed on any adequate reforestation program until they are assured of a better fire protection. This is the reason the Committee recommends that each township set up better facilities and organizations for fire protection and that all fires be put under regulations.

2. The County should be Zoned, -- A county wide zoning ordinance should be enacted to protect the progress which might be made in putting this class of land to the above recommended usage and to prevent the reoccurring of the above mentioned relief costs. These relief costs are not only expensive to the public but they are associated with a serious human erosion. This Committee would like to make the following recommendations to the Waushara County Board.

(a) That Walter Rowlands appear before the County Board and explain the Wisconsin Zoning law;

(b) that the Waushara County Board appoint a zoning committee to assemble data dealing with the physical characteristics of the land, road and school costs, relief burden, tax status, and other pertinent matters about the poorer tracts of land of the county; (many of these facts are included in this report);
(c) the committee then prepare and sponsor a zoning ordinance and a map outlining the tracts on which certain uses are prohibited; and --

(d) this committee conduct preliminary meetings in the rural communities to discuss the pros and cons of zoning in general; after which --

(e) county-wide hearings be held where those who object to the specific provisions of the proposed ordinance and the tentative boundaries laid out in the zoning map may state their case.

(f) then if the ordinance -- perhaps modified by this time -- receives the approval of the county board, the county enacts the ordinance, publishes the text and the accompanying map, proceeds to its enforcement which implies among other things --

(g) the public recording of "nonconforming uses" of land in restricted districts - that is, establish uses that are not affected by the ordinance until they are discontinued.

3. Should enter land under Forest Crop Law. -- That as much of this class of land as is permitted by the State Conservation Department be entered under the Wisconsin Forest Crop Law. At the present time the county is losing the 10¢ an acre which the State pays the county on land which is placed under the forest crop law and in established county forest. These funds might well be applied for and used for the development of this kind of land. Either private parties, or the villages, towns or the county may take advantage of the Wisconsin Forest Crop Law. If private parties enter land under this law they are required to pay 10 cents an acre tax to the township and the State also pays to the township a like amount. The township under this system would receive approximately 20 cents per acre tax on each acre entered under the Forest Crop Law. The Town is required by Statute to pay to the County Treasurer 20 per cent of the amount the State pays to the town. When the County is the owner of the land and it has been duly entered under the Forest Crop Law the State Pays the entire amount to the town and the county. The payment being approximately 10 cents to the township and 10 cents to the County for development work on the forest area.

In view of the fact that 25 per cent of this land is tax delinquent and a burden to the other people in the county, it would seem advisable that these steps be taken as soon as possible.

4. Land Purchase Committee Needed.--- The Committee further recommends to the Waushara County Board of Supervisors that a County Land Purchase Committee be appointed and provided with authority and sufficient appropriations to obtain title to as much tax delinquent land as possible, and some other tracts, which need development. Now, it takes six years before the county can obtain a good title to tax delinquent land. The persons who own the land which is being "dropped for taxes" knows whether or not they intend to redeem it. After the land is purchased it should be put to one of the above mentioned non-farming productive uses as rapidly as possible.
If the $416,000 which Waushara County has borrowed because of tax
delinquent property is to be paid out of this land it must be put to work; other-
wise, this indebtedness will fall on the good agricultural land of Waushara County
which is already carrying all of the tax load it should carry.

The land purchase committee should have authority to resell the land to
which they have obtained title to private parties or municipalities providing
the purchaser will agree to put it into any of the non-agricultural farming uses.
Before reselling the committee should remove such buildings as are located on the
land. (Our relief problems can not be satisfactorily solved by turning these kind
of buildings and this kind of land over to this unfortunate group.)

5. Stream and Lake Improvement, -- The streams and lakes of Waushara
County should be improved and stocked with an abundance of fish. These streams
are naturally excellent for self propagation, but soil erosion and the clearing
of timber has spoiled some areas. There is also an increasing number of fisher-
men who visit these waters each year; and it, therefore, takes more fish than
will naturally reproduce. These waters should be stocked as the Yellowstone river
and lake in the Yellowstone National Park.

6. Farm Security Administration can help, -- The Committee further
recommends that until the zoning ordinances have been enacted that the Farm
Security Administration be advised not to make any further loans or establish
any more clients on this kind of land.

7. AAA can help, -- The Committee recommends to the Agricultural Con-
servation Association (AAA) that the benefit payments allotted to this kind of
land be continued in at least the same aggregate amounts but that the benefit pay-
ments be paid entirely on soil building basis, and furthermore that soil building
practices be limited to:

(a) establishing solid forest plantings
(b) planting shelterbelts and snowfences
(c) building of fire lanes and cropping the same for game and
    bird food
(d) fencing wood lots
(e) planting and cultivating crops for game food
(f) improving stands of forest trees.

Setting up these limitations on benefit payments is not "class legis-
lation", any more than it is to have a different schedule of payments for the
"range country" and for the "corn belt".

Class "B" GREEN --

That the land colored Green "B", 32,740 acres, should probably remain
in its present use regardless of what area in which it lies. Most of this class
of land is low and ordinarily called "swamps". These low land areas should re-
main in their present use. This lowland lies along the streams and provides
pasture for livestock during the dry periods of the summer season, and in years
of severe drought farmers find it profitable to cut these areas for hay. In
other words, they act as a drought insurance policy.
Recommended Uses

Most of this land which lies in the township of Warren and Aurora belongs mainly to the Deltos Rug Company and is not suitable for drainage and should remain in its present use which is mainly that of water storage since the Rug Company does not use its products for the making of rugs. The land lying in Poy Sippi and northern part of Aurora and surrounding Lake Poygan can not profitably be drained because of the high water level of the lake. Some of this land is at present in use for Fur farming, but all of it has great possibility for development for game bird hunting. Certain areas of the swamp land should be set up as game refuges and the balance of it can be opened to hunters under the supervision of the Conservation Commission. There is plenty of cover and feed for a great many more birds than now occupy this land.

Class "C", RED --

The land colored Red on the map "C", of which there are 79,950 acres in this county, is put into this questionable classification because of its questionable value for farming in its present state of fertility and under its present management. It is probably more of a human classification than one of land.

The committee feels that much of this land, especially that not lying adjacent to other good farm land; or that lying in an area surrounded by land put in Class A (Blue) should be handled the same as has been recommended for Class A land.

In view of the fact that a majority of the farms in Waushara County which have good land are too small in size to be operated most economically, it is the opinion of this committee that approximately 60,000 acres of this Class C land could profitably be added to these good farms so as to make them of a more desirable size. It should be pointed out, however, that before this land, which is colored red, can be profitably farmed it should be improved through the use of lime, fertilizer, and the plowing under of legume sod.

<table>
<thead>
<tr>
<th>Estimated cost per acre of rebuilding:</th>
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<tbody>
<tr>
<td>3 yards of marl @ 20¢ per yard</td>
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<tr>
<td>Hauling @ 50¢ per yard</td>
</tr>
<tr>
<td>100 pounds of 45% phosphate</td>
</tr>
<tr>
<td>200 pounds of muriate of potash</td>
</tr>
<tr>
<td>10 pounds of alfalfa, grass or legume equivalent @ 40¢ per pound</td>
</tr>
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<td></td>
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</tbody>
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The labor, power, and machinery cost will probably be very close to the above mentioned out-of-pocket costs so that it can be estimated that it will cost approximately $25.00 per acre to fit the land in this classification for legume hay production after which it will be suitable for other crop farming.
The use of this class of land in its present condition for farming has resulted in depleted resources and farm poverty; this in turn has bred tax delinquency, excessive cost for local services, such as roads and schools, and increased relief as is indicated by the following statistics:

16% of this kind of land is now tax delinquent and 40% of all tax delinquent land falls in this classification;
54% of the direct relief cases live on this kind of land;
50% of the WPA workers live on this kind of land;
47% of those people receiving surplus commodities live on this kind of land;
65% of the Federal Land Bank delinquencies are associated with this kind of land and 50% of their potential real estate falls in this classification.
All of the Farm Security Administration clients who live on this land are delinquent.

If the above percentages are added to those listed in connection with the Class A land it will be noted that about 70% of our most urgent social and economic problems of this county are associated with an unwise use of these classes of land. It will also be noted that Waushara County can solve most of its relief problems if it can solve the problems connected with these A&B classes of land, therefore, this committee recommends as follows:

**Recommended Uses and Suggested Methods**

1. Whereas, at present there is no way of stopping uninformed and careless persons from plowing up large tracts of this land and farming it unprofitably, and exposing it to wind erosion which not only is a damage to the adjoining land owners, but also a "curse" to the community; and whereas there is no way of preventing land owners from reselling this kind of land in its present unimproved state for farming purposes which experiences indicate create not only local tax and relief problems but also create serious human erosion and all of the consequences which follow farm poverty. The following land use recommendations should be incorporated in connection with the recommended zoning ordinances referred to in connection with the Class A land.

(a) land owners should be advised against and the public be informed as to economic and social loss which results from reselling this class of land for farming purposes before it is improved;
(b) strip farming should be practiced on those fields which are subject to wind erosion;
(c) evergreen shelterbelts should be planted on this land every 40 rods, preferably 3 rows wide, and running in a north and south direction.

2. Whereas, much of this land is owned by either absentee land owners or indifferent local owners the proper usage of this land can best be encouraged by assessing it for approximately the same value as that land which is classified as A (road land) in the same community. Farmers are not encouraged to make improvements when they find their assessed valuation increased as soon as improvements are made. (This procedure will either cause its improvement or place it under the Forest Crop Law or accomplish liquidation.)
3. The Federal Land Bank and other corporations and individuals should be requested to either liquidate their loans on this kind of land, especially where they are delinquent, or extend sufficient credit to rebuild the soil in line with these above recommendations, and refinance on an ability to repay basis.

4. The Farm Security Administration might well discontinue to set up new clients on this land unless they also make provisions for rebuilding the land as above recommended, and furthermore grants might be discontinued to farmers living on this kind of land as rapidly as is possible without serious human consequences.

5. The Agricultural Conservation Association (AAA) should class the farmers which have in excess of 30 per cent of their crop land in this class as a non-allotment farm and should make their benefit payments entirely on the following soil building practices, and certainly not in any smaller total amounts than are now being granted. Benefit payments should be made in kind rather than cash.

(a) strip farming
(b) shelterbelt planting and maintenance
(c) applying fertilizer
(d) applying lime
(e) seeding alfalfa, other legumes and grasses
(f) solid forest plantings
(g) improving stands of forest trees
(h) planting cultivated crops for game food
(i) fencing woodlots to keep out livestock.

Class "D", ORANGE --

The land colored orange of which there is a total of 7,720 acres, is primarily marsh land of either peat or muck. It occupies low lying irregular areas and narrow belts along stream courses. The greater share of it lying in the town of Warren, the balance in the towns of Marion, Aurora, and Poy Sippi. There is another drained muck area in the town of Springwater but this has been developed and is now the most profitable potato and onion land in Waushara County.

The material in this area varies in depth from 10 inches to 10 feet or more being shallower near the margins of the area and vary in color from brown to black. The underlying materials vary from sand to sticky clay. These areas were once lakes or channels for the water of melting glaciers. When the water receded some lakes were formed in the depressions, and fibrous plants and water loving grasses soon filled the depressions with their roots and their decaying flinters. The first stage in this process gives Swamp, the second Peat, and the third Muck.

Most of that part of the land lying in the towns of Marion and Warren is at present adequately drained through regularly constructed drainage systems, additional ditches can readily be dug if necessary. The tract under cultivation in the town of Poy Sippi is also drained but needs a pumping system to remove surplus water because it lies lower than the drainage outlets and it is, therefore, expensive to remove the excessive water from this area. That area lying in the town of Aurora is not valuable for cultivated crops unless a drainage system is installed. There may be some question regarding advisability of draining into the Fox River, because this river has been known to back up during periods of heavy rainfall.
In dry periods when the water table is lower than usual and the surface becomes dry, fires have frequently burned over some of this area leaving the underlying land and rough projections exposed. This usually leaves the land unfit for anything except grazing.

About one-third of this acreage, 2770 acres, is covered with timber and brush consisting mainly of tamarack, poplar, birch, and willow and will need to be cleared before it can be used for agricultural purposes. It would take several years to clear a tract of land and, therefore, it would be desirable if an individual, or a group of individuals, are to start operating this kind of land for them to acquire some acreage which has already been cleared and broke. It is estimated that about one-seventh, or about 1000 acres, of this classification is at present being farmed, most of which has been put into the growing of Reed Canary Grass.

It will be noted from the map that most of this class of land lies adjacent to the destitute villages of Redgranite and Lohrville. These villages were at one time the most prosperous in the county due to the quarry industry, but now developments in road building have removed (at least for the present) the need for paving blocks. For the last eight years most of the families living in the villages of Redgranite and Lohrville have been receiving some form of relief. Here are also many families in the rural areas of the towns of Marion and Warren who have been more or less dependent on the quarry industry for part-time employment, who are also receiving public assistance because of the shut down of the quarry industry.

It has been estimated by the Public Welfare Department of the county that an average of over $30,000 per year has been spent for various forms of assistance as a direct result of the lack of employment in the quarry industry. There has probably been an additional $20,000 expended annually for assistances to other families who have been living in the surrounding rural area on unproductive soil; and to families who have moved in for the purpose of getting WPA employment. This makes an eight year total of nearly a half million dollars, most of which has come from the Federal government. Today there are still 103 families on relief in Redgranite plus 19 families who live in the outskirts, and 27 in Lohrville. Many of the other families living in these villages live off the business created by these relief expenditures.

This committee is of the opinion that many of the able bodied persons receiving this assistance can be rehabilitated through a proper development of the land in this classification.

Recommendations for Future Uses

This land has an almost unbelievable possibility for development into commercial vegetable land, including such crops as potatoes, onions, tomatoes, and cabbage. The high-sugar content beets which are being developed will provide another profitable crop for this land.

The Committee, therefore, makes the following recommendations:

1. That the Farm Security Administration or some other agency, public or private, who has available money should take the leadership in acquiring, and in the development of this land; furnishing the heavy machinery which will be needed to clear and prepare the land for cultivation; and to supply the needed mineral fertilizers.
The content of nitrogen in this land is high but the amount of phosphate and available potash is low. The first year which this land is put under cultivation it should have an application of 800 to 1000 pounds of a 1-3 mixture of phosphate and potash, such as is found in the 0-9-27 analysis. About one-half of this fertilizer should be broadcast and the other half drilled in with the cultivated crops.

2. The Farm Security Administration might also advance the funds needed to build greenhouse and storage facilities, if private funds can not be obtained. These storage facilities should include an artificial refrigeration plant which will be needed to store the surplus vegetables grown during the summer, which unquestionably will find their best market during the fall, winter and spring months. At present the Fox River Valley and the larger cities of southern Wisconsin and northern Illinois are required during winter months to import needed vegetables from distant areas. The high price which the consumers pay for these represent, mainly, handling and transportation costs.

In other words, the market for these crops is closely available and the development of this area would be an attempt to produce a product for which there is a ready demand. There has been a trend among the city consumers to reduce their demands for heavy foods and to increase their purchases of fruits and vegetables. Practically all vegetables including tomatoes, potatoes, onions, and cabbage, can be profitably produced on this land if:

(a) proper cultural and fertilization methods are followed;
(b) if proper storage facilities are provided, and
(c) adequate water level control is established

The quality of properly produced muck vegetables has never been excelled.

Class "E", YELLOW --

The land colored yellow on the map, of which there are 226,160 acres in this county, should according to community recommendations remain in arable farms with the exception of some isolated tracts which lie adjacent to or within the previously mentioned Class A land.

It will be noted that this class of land represents the arable farm land of Waushara County. The problems associated with its best uses fall into two categories:

1. Those which lie within the line fence and are of a technical nature,
2. Those which lie beyond the line fence and are of an economic nature.

Because of the lack of time and complications which arise with these external economic problems, many of which require public action, this report deals primarily with the technical problems and it is with these problems that the average farmer can do the most to increase his net farm income.

The farmers in the county who are operating this land can be divided into two groups:

1. The non-commercial, -- those farmers who primarily live on the products of his farm and who may have special crops or markets. In many cases this group of farmers have a great deal of farm labor and much of their work is done by hand, others have outside sources of income which make it unnecessary for them to engage in a business farming.
2. Commercial farmers, -- this includes that group who operate the farm as a business. In this group are those who use modern equipment and the new power driven machines. It also includes those who specialize in certain enterprises.

The land which has been put into Class E can roughly be divided into three grades:

1. That land lying in Area No. 1 which is commonly known as heavy soil;
2. The light soil which has been improved through the use of good farm practices; and
3. That light soil which needs improvement of some kind, such as liming, fertilization, or protection from wind erosion.

V
TECHNICAL PROBLEMS ASSOCIATED WITH CLASS "E" FARM LAND

Grade 1 --

Practically all of the first grade of Class E land lies in Area No. 1 and is heavy soil.

It is important that this soil should be carefully handled and the mechanical conditions so maintained as to permit the circulation of air through the surface material.

Applications of 200-300 pounds of super-phosphate per acre are needed for each rotation, under the dairy farming system now existing.

All poorly drained places should be drained, and the major portion of these types would be greatly benefited by tiling.

A rotation of crops well suited to these soils is one year of small grain consisting of oats, barley, or wheat seeded to clover or alfalfa with a little timothy mixed in. The second year the clover from the first crop may be saved for hay, and the second allowed to go to seed. The third year the hay may be cut; and the fourth, the field may be pastured. Following this the sod should be plowed for corn. Pasturing may be omitted if there is other grazing land on the farm. This makes a four or five year rotation, with 50 per cent or over of the crop land into hay land or rotation pasture. Possibly a longer rotation would be used if alfalfa is used instead of clover.

The following table indicates the recommended shift, which the committee thinks should be eventually made on this kind of land, if farmers are to have the most economically operated farm in the future:
<table>
<thead>
<tr>
<th>Crop Land per Farm</th>
<th>Assessors Figures for 1938</th>
<th>Community Committeemen Recommendations</th>
<th>Shift Desired</th>
</tr>
</thead>
<tbody>
<tr>
<td>Percent of Crop acres in grain crop</td>
<td>54.2</td>
<td>78</td>
<td>+</td>
</tr>
<tr>
<td>Percent of crop acres in cultivated crops</td>
<td>32</td>
<td>24</td>
<td>-</td>
</tr>
<tr>
<td>Percent of crop acres in hay and rotation pasture</td>
<td>30</td>
<td>28</td>
<td>-</td>
</tr>
<tr>
<td>Percent of hay land in alfalfa</td>
<td>38</td>
<td>52</td>
<td>+</td>
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<tr>
<td>No. of milk cows</td>
<td>13.1</td>
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<td>+</td>
</tr>
<tr>
<td>No. of laying hens</td>
<td>65.4</td>
<td>195</td>
<td>+</td>
</tr>
<tr>
<td>No. of brood sows</td>
<td>.8</td>
<td>3</td>
<td>+</td>
</tr>
</tbody>
</table>

The light sandy soils in the northern part of Bloomfield, colored blue, on the enclosed land classification map, should be reforested by the local farmers mainly with white pines which natively grew well on this soil. That land colored red, unless it lies adjacent to good farm land and can be quite regularly covered with stable manure, should also be reforested with White Pine. It might be well for the farmers living there to leave unplanted strips on this land as fire lanes. These fire lanes could be cultivated and sown to buckwheat and corn, and left for winter feeding for game in that area, thereby providing better hunting grounds.

Grade 2 and 3

The second and third grade of Class E land lies mainly in Area II and III (the central and western sections of Waushara County) and are of a sandy type.

The Plainfield sand (45,230 acres) and the Coloma sand (141,190 acres) is the poorest for farming purposes, -- it is low in humus, low in water holding capacity and has "no bottom" to it. Higher net agricultural returns are needed if this type of sand is to be profitably improved.

The Coloma sandy loam (30,540 acres) has a good bottom and is generally considered good agricultural land if its productivity is maintained. This type of soil, if improved with humus and mineral fertilizers makes good potato land.

The most important differences between these sandy types of soil and heavier classes, such as silt loams and clay loams, however, are not of a chemical nature, but of a physical nature, having to do with their water holding capacity, drainage, and tillage.

Suggestions for the improvement of these types are based upon field experiments, chemical and mechanical analyses, and upon studies and observations covering a variety of sandy soils.
Cultural Practices

In the management of these sandy soils it should be kept in mind that they are naturally low in organic matter, and in the mineral elements required, the water holding capacity is poor and the soil is acid. As all of the types in this group are in an acid condition they would be greatly benefited by the application of lime. Every farmer should have his soil tested for acidity.

When the amount of organic matter of humus forming material in the soil is increased, the water holding capacity is also increased. The humus forming material can best be increased by applying stable manure and by plowing under legumes as manure. Of the legumes, alfalfa, sweet clover, red and mammoth clover are perhaps better adapted to sandy soils than any of the others, but none of these will make the most satisfactory growth until the acid condition is corrected. The mineral elements required must be supplied by the use of commercial fertilizers.

When a soil can be made to produce a fair crop of alfalfa, or clover, without an excessive expenditure, that soil can be successfully and profitably improved. It is, therefore, important that the first efforts in building up a soil should be directed toward the establishing of conditions which will be favorable for the growth of legumes.

From experiments conducted it seems advisable to sow alfalfa and clover without a nurse crop, where the humus and fertility of the soil is low, since it will then have all of the moisture in the soil for its own growth. There is also some danger of the young plants being damaged by the hot sun when the nurse crop is removed. The field intended for seeding should be plowed in the fall, or as early as possible in the spring, and a top dressing of ground limestone applied at the rate of 2,000 pounds per acre, or 4,000 pounds of marl before seeding, 8-12 pounds of seed should be sown per acre and covered to a depth of 1 to 1½ inches in depth. It may be desirable to add brome grass to the seeding as it is drought resistant and does help to build a better sod. The seeding should be followed by a roller to compact the soil around the seed, and the roller should be followed by a light harrow to roughen and loosen the immediate surface to check evaporation and blowing of sand by the wind. Where it can be secured a top dressing of well rotted manure should be applied before the last harrowing. If manure is not available about 100 pounds of super phosphate and 300 pounds of muriate of potash should be applied at the time of seeding to clover. The amount of commercial fertilizers containing phosphorus and potash which should be subsequently applied will depend on the crops to be grown and especially on the amount of manure produced on the farm.

Late in summer it may be necessary to clip the weeds which are sure to come. The cutting bar should be run high and the clippings left on the field as a mulch.

Rotations

In selecting a rotation of crops to follow on the sandy soils it should be kept in mind that the soil is low in organic matter, and that this must be supplied either by applying manure, or by plowing under green manure crops or legume sods. When the soil has been built up to a fair stage of fertility, a nurse crop may be used in seeding clover and alfalfa to better advantage than when the soil is very poor; and it is frequently desirable to seed with spring wheat or oats. This system is considered by many to be more desirable, since an extra crop can be secured.
When the land is plowed in the spring it is often advisable to pack the soil with a roller, but this should be followed by a light harrow to secure a mulch on the surface. Where the fields are exposed, and the soil is blown by the wind, an effort should be made to prevent damage from this source. The most effective plan is to lay out the land in long narrow fields, alternating hay land with cultivated crops.

With the successful growing of clover and alfalfa, the livestock may be developed to a much greater extent than at present.

By plowing under a crop of clover sod every few years and by following a definite rotation and approved methods, the yields of potatoes will be greatly increased; and this crop may well be depended upon as one of the chief sources of income for the sandy soils of the area. Beans, peas, sweet corn, etc. could be profitably grown to a much greater extent, and the trucking industry could be extended if proper arrangements were made for marketing. The soil warms up early and is well suited to cucumbers, strawberries, and all quick maturing vegetables.

In the management of this group of soils it will probably be found that Coloma sandy loam and the heavy phase of Coloma sand will respond more quickly to careful treatment than the other types, chiefly on account of their containing a higher percentage of clay in the subsoil.

Those farmers living in these areas who wish to engage in commercial farming should make the shifts recommended by the community committee of this area and are indicated in the following chart. It will be noted that the committee men have recommended doubling the size of farm business. In doing so they have had in mind the use of more of the modern farm equipment and they have tried to set up the business on the size that would warrant the employment of hired help. There is a desire among committee men to provide apprenticeship among young men on good farms who want good experience in good farm management.

<table>
<thead>
<tr>
<th></th>
<th>AREA II&lt;sub&gt;1&lt;/sub&gt;</th>
<th>AREA II&lt;sub&gt;2&lt;/sub&gt;</th>
<th>AREA II&lt;sub&gt;3&lt;/sub&gt;</th>
<th>AREA III</th>
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<tr>
<td>1938 Assessors' figures</td>
<td>Com. Committee Recommend</td>
<td>Shift Desired</td>
<td>Com. Committee Recommend</td>
<td>Shift Desired</td>
</tr>
<tr>
<td>Crop Land per Farm</td>
<td>51</td>
<td>136&lt;sup&gt;+&lt;/sup&gt;</td>
<td>66</td>
<td>137&lt;sup&gt;+&lt;/sup&gt;</td>
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<tr>
<td>Percent of Crop acres in grain crop</td>
<td>31</td>
<td>20&lt;sup&gt;-&lt;/sup&gt;</td>
<td>41</td>
<td>23&lt;sup&gt;-&lt;/sup&gt;</td>
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<tr>
<td>Percent of crop acres in cultivated crops</td>
<td>35</td>
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<tr>
<td>Percent of crop acres in hay and rotation pasture</td>
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<td>58&lt;sup&gt;+&lt;/sup&gt;</td>
<td>25</td>
<td>55&lt;sup&gt;+&lt;/sup&gt;</td>
</tr>
<tr>
<td>Percent of hay land in alfalfa</td>
<td>56</td>
<td>46&lt;sup&gt;-&lt;/sup&gt;</td>
<td>60</td>
<td>53&lt;sup&gt;-&lt;/sup&gt;</td>
</tr>
<tr>
<td>No. of milk cows</td>
<td>7</td>
<td>16&lt;sup&gt;+&lt;/sup&gt;</td>
<td>7</td>
<td>13&lt;sup&gt;+&lt;/sup&gt;</td>
</tr>
<tr>
<td>No. of laying hens</td>
<td>56</td>
<td>185&lt;sup&gt;+&lt;/sup&gt;</td>
<td>67</td>
<td>160&lt;sup&gt;+&lt;/sup&gt;</td>
</tr>
<tr>
<td>No. of brood sows</td>
<td>.6</td>
<td>2&lt;sup&gt;+&lt;/sup&gt;</td>
<td>.5</td>
<td>2&lt;sup&gt;+&lt;/sup&gt;</td>
</tr>
</tbody>
</table>
In order to arrive at the most desirable size of business for the commercial farmer operating in each of the designated areas, a blank form was mailed to each of 109 farmers and farm women who are members of the community and county Land Use Planning Committee. The average of their recommendations were computed and are shown in the following table. It will be noted that the recommended size of business is much larger in the lighter soil area which is most easily tilled. It will also be noted that the recommended size of business is nearly double that which was reported by the Assessors in 1936.

### RECOMMENDED SIZE OF BUSINESS

<table>
<thead>
<tr>
<th></th>
<th>AREA I</th>
<th>AREA II</th>
<th>AREA II</th>
<th>AREA III</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Assessors</td>
<td>Committee Recommended</td>
<td>Assessors</td>
<td>Committee Recommended</td>
</tr>
<tr>
<td>No. of crop acres needed (Includes only land colored yellow)</td>
<td>54.2</td>
<td>78</td>
<td>51.7</td>
<td>136</td>
</tr>
<tr>
<td>Rotation</td>
<td>4</td>
<td>5</td>
<td>4</td>
<td>4</td>
</tr>
<tr>
<td>Approx. acreage needed for permanent pastures</td>
<td>41</td>
<td>30</td>
<td>21</td>
<td>30</td>
</tr>
<tr>
<td>No. of hired men needed</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>No. of horses needed</td>
<td>3</td>
<td>3</td>
<td>3</td>
<td>2</td>
</tr>
<tr>
<td>No. and type of tractors needed</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>No. of milk cows</td>
<td>13.1</td>
<td>21</td>
<td>7.2</td>
<td>16</td>
</tr>
<tr>
<td>No. of young stock</td>
<td>6.1</td>
<td>11</td>
<td>4.1</td>
<td>9</td>
</tr>
<tr>
<td>No. of brood sows</td>
<td>.8</td>
<td>3</td>
<td>.6</td>
<td>2</td>
</tr>
<tr>
<td>No. of pigs to raise for market</td>
<td>33</td>
<td>16</td>
<td>14</td>
<td>44</td>
</tr>
<tr>
<td>No. of laying hens</td>
<td>65.4</td>
<td>195</td>
<td>55.9</td>
<td>185</td>
</tr>
</tbody>
</table>

One of the most effective ways which all farmers can supplement their farm income or make their farms pay better is by having a good garden and by producing as much as possible of the food which is needed for the farmer to live in a healthy condition.
The following table is a summary of the opinion of 55 homemakers in eighteen townships of Waushara County which indicates the amount of home grown products needed per person to maintain good health, from a questionnaire which they filled in and which included the following yearly amounts per person.

**Milk** - 365 quarts per child, 183 quarts per adult  
**Butter** - 40-45 pounds  
**Cheese** - 23 pounds per person  
**Eggs** - 30 dozen  
**Poultry** - 20 pounds, dressed  
**Meat** - 120-165 pounds in all  
**Potatoes** - 4-8 bushels  
**Tomatoes** - 2 bushels (20 quarts canned)

<table>
<thead>
<tr>
<th>FOOD</th>
<th>PER CENT OF OPINIONS IN REGARD TO AMOUNT</th>
<th>PER CENT OF HOMEMAKERS SAYING THAT FARM FAMILIES CAN PRODUCE ENOUGH FOR THEIR OWN NEEDS</th>
<th>PER CENT OF HOMEMAKERS SAYING THAT FARM FAMILIES DO PRODUCE ENOUGH FOR THEIR OWN NEEDS</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>O.K.</td>
<td>Too Much</td>
<td>Not Enough</td>
</tr>
<tr>
<td>Milk</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Butter</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cheese</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Eggs</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Poultry</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Meat</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tomatoes</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Vegetables</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Potatoes</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fruit</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cereals</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sweets</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

It may be necessary to include a practical system of irrigation if productivity is to be increased. Irrigation is, of course, only practical where irrigation water is available from wells or open water. The Committee recommends that every farm on sandy soil should have a garden under irrigation of from one-half to one acre and containing small fruits and vegetables, including early potatoes.

The greatest local problem which farmers have next to that of increasing the size of their business is that of productivity. The following table which is taken from Bulletin 188, Wisconsin Agricultural Statistics, shows that the productivity of the farms is too low. The problems of productivity can partially be solved by the elimination of the poorest of our crop land and the poorest of our livestock and poultry, and by improvement of our soils - livestock, and poultry.
PRODUCTIVITY TOO LOW

<table>
<thead>
<tr>
<th>Crop</th>
<th>Yield per Acre</th>
<th>Yield per Acre Av. for state</th>
<th>Yield per Acre Minnetago Co.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Corn (20 yr. average)</td>
<td>26.3</td>
<td>32.2</td>
<td>34</td>
</tr>
<tr>
<td>Oats (20 yr. average)</td>
<td>25.7</td>
<td>34.0</td>
<td>28.5</td>
</tr>
<tr>
<td>Barley (20 yr. average)</td>
<td>24.0</td>
<td>28.2</td>
<td>30.7</td>
</tr>
<tr>
<td>Rye (20 yr. average)</td>
<td>8.6</td>
<td>12.0</td>
<td>16.3</td>
</tr>
<tr>
<td>V. Wheat (20 yr. average)</td>
<td>20.1</td>
<td>18.1</td>
<td>16.3</td>
</tr>
<tr>
<td>S. Wheat (20 yr. average)</td>
<td>19</td>
<td>17.1</td>
<td>19</td>
</tr>
<tr>
<td>Potatoes (11 yr. average*)</td>
<td>102</td>
<td>79.4</td>
<td>97.9</td>
</tr>
<tr>
<td>Clover and Timothy Hay (20 yr. av.)</td>
<td>1.4</td>
<td>1.3</td>
<td>1.4</td>
</tr>
<tr>
<td>Alfalfa (13 yr. average)</td>
<td>2.1</td>
<td>1.7</td>
<td>2</td>
</tr>
<tr>
<td>Milk per cow (cwt.)</td>
<td>61</td>
<td>56.3</td>
<td>54</td>
</tr>
<tr>
<td>Eggs per hen (1927)</td>
<td>90</td>
<td>88</td>
<td>90</td>
</tr>
</tbody>
</table>

Waushara County will, of course, need to be content with lower productivity than is true for the average of the state because of its lower grade of soil. However, this does not mean that the productivity can not be improved, nor does it mean that the cost of production, because of this lower productivity, need to be higher for two reasons:

1) the capital investment in land values are less:
2) the land can be more cheaply operated.

Prof. A. R. Whitson, of the Wisconsin College of Agriculture, has graded the land as follows:

<table>
<thead>
<tr>
<th>Grade A</th>
<th>Grade B</th>
<th>Grade C</th>
<th>Grade D</th>
</tr>
</thead>
<tbody>
<tr>
<td>Waushara County</td>
<td>0</td>
<td>26</td>
<td>55</td>
</tr>
<tr>
<td>Winnemago County</td>
<td>33</td>
<td>26</td>
<td>25</td>
</tr>
<tr>
<td>State</td>
<td>17.1</td>
<td>27.0</td>
<td>21.6</td>
</tr>
</tbody>
</table>

It will be noted from the following table, which is taken from Bulletin 188, Wisconsin Agricultural Statistics, listing sources of gross farm income, that diversity is not a problem in Waushara County. This does not mean that individual farms are all sufficiently diversified.

**Diversity of Farm Business**

<table>
<thead>
<tr>
<th>Item</th>
<th>Gross Income per Farm</th>
<th>Milk</th>
<th>Cattle and Calves</th>
<th>Hogs</th>
<th>Poultry and Eggs</th>
<th>Sheep, Wool, Honey, Beeswax</th>
<th>Potatoes</th>
<th>Fruits</th>
<th>Peas for Canning</th>
<th>Hay</th>
<th>Grains</th>
<th>Seeds</th>
<th>Other Miscellaneous Items</th>
</tr>
</thead>
<tbody>
<tr>
<td>Waushara County</td>
<td>$1,520.</td>
<td>38</td>
<td>8</td>
<td>10</td>
<td>13</td>
<td>.14</td>
<td>.3</td>
<td>.6</td>
<td>.1</td>
<td>1</td>
<td>3</td>
<td>1</td>
<td>11</td>
</tr>
<tr>
<td>State Average</td>
<td>$1,764.</td>
<td>48</td>
<td>10</td>
<td>15</td>
<td>10</td>
<td>.8</td>
<td>.5</td>
<td>.7</td>
<td>.8</td>
<td>3</td>
<td>.5</td>
<td>.3</td>
<td>5</td>
</tr>
</tbody>
</table>
VII
LONG TIME PLANNING

The following recommendations are of a long time nature. They are beset with many obstacles, traditions and human relationships, but they are not impossible of attainment. They may appear like visionary new frontiers, but it must be admitted that they point the way to a better rural life in Waushara County; built on a program of working with nature and working with the natural resources of Waushara County rather than trying to "buck" nature as has too often been true in the past.

Area II

This area has been called the Recreational Farm area.

With its many lakes, streams, and natural growth of pine, this area is a natural outdoor playground and with the expenditure of little money it could be developed into one of the best in the middle west, especially because of its accessibility to large cities (close by and good roads).

Nature never intended that this area should be developed into intensive agricultural cultivation, even though there are a few scattered tracts of land through the area of exceptionally good farm land, mostly Colona sandy loam (17,880 acres).

The land problems of this area, such as soil depletion, and wind erosion are man-made, and can be solved by man.

It has often been said that the place to raise children is in the country and most city families would prefer to do this if conditions were made attractive. As has previously been stated, the good concrete roads of today make it possible for many city families to live in the country during the summer months when their children are not in school. This area of the county affords locations for hundreds of summer homes. Development along this line will (1) create a better direct market for such commodities as dairy, poultry, fruits, and vegetables (a diet which is becoming very popular today); (2) create a wider tax base because most of the people who can afford summer homes can also afford to pay reasonable taxes to help develop the kind of playground in which they are interested. They will not object to additional taxes if the taxes are used to provide better fishing, hunting, and desired out-of-doors for their children.

Area II

This area has been called the Diversified Non-Commercial Country Life Farming Area. By non-commercial is meant a system of farming which first supplies the food needs of the family and then something to sell, and a system of farming which does not require expensive power machinery. Here is a good place for the horse and horse drawn equipment, cooperative ownership of machinery, or custom use of machinery.

The fields in this area are generally too small or too rough for the most economical use of power equipment. The use of power equipment also brings into the system the necessity of growing more cash crops. This area is not particularly adapted to that kind of farming.
There are several tracts of land within this area which are exceptions. In general these tracts of land are composed of a high quality of Coloma sandy loam of which there is approximately 22,660 acres scattered throughout the area.

With an exceptional farm here and there where the fertility has been maintained through the application of liming materials, phosphate, and potash and the maintenance of over 50 per cent of the crop acres into legumes, the crop land in this area is seriously depleted of those essential plant foods.

It might also be said of the majority of the soil in this area that it is "fatless" and the crops which can most successfully be grown in this area are of a high protein content; which makes it possible to use them for obtaining growth rather than fat in connection with livestock and poultry feeding. The Committee, therefore, makes the following long time recommendations as to how the land in this area can best be used in the future:

(1) at least 60% of the crop acres should be put into alfalfa, red clover, and sweet clover. (Brome grass should be sown with the alfalfa)

(2) that each new seeding of the above soil building plants should be adequately fertilized with lime, phosphate and potash. The soil in this area can most rapidly be built up through the fertilization of these soil building crops.

(3) that no more corn or potatoes should be grown per farm than can be adequately covered with stable manure (at least 6-8 tons per acre).

(4) Waushara County dairymen are out of the milk shed area and, therefore, can not expect to receive the highest price for their milk. As far as the cow business is concerned, they are in a by-product producing area and for this reason this Committee feels that until there is a more profitable demand for skin milk, that it be retained on the farm.

(5) That this is an ideal area for the production of pullets, feeder pigs, and for the growing of young dairy cattle. The soil is generally free from disease and parasites and the legume hay and pasture, corn, plus the available skin milk makes ideal growing feeds.

(6) Each farmer should have woodlot which is large enough so that by selective cutting it will reproduce itself indefinitely and yet supply enough fuel for the farm. If this reproduction is to go on most rapidly and satisfactory, cattle should be fenced out. Some underplanting may be necessary and some of the poorer trees wooded out.

(7) Each farm should also have a garden which is adequate to produce most of the foods for home use. This garden should include all of the vegetables which are needed for good health -- a good strawberry bed, raspberries, hybrid filbert nuts, cherries, plums, currants, gooseberries, and an orchard which is large enough so that it will command care, (most of the orchards in this area are composed of antiquated trees of poor varieties). The orchard trees in this area would benefit from the annual application of a few pounds of ammonium sulphate. Irrigation should be used if necessary.
The following chart indicates the amount of money that a farm family of five might save per year by producing as much as possible of their food for home use.

<table>
<thead>
<tr>
<th>A FAMILY OF FIVE CAN PRODUCE</th>
<th>FARM VALUE</th>
<th>PURCHASE COST</th>
</tr>
</thead>
<tbody>
<tr>
<td>THESE YEARLY NEEDS</td>
<td>in dollars</td>
<td>in dollars</td>
</tr>
<tr>
<td>Milk</td>
<td>365 gallons</td>
<td>52</td>
</tr>
<tr>
<td>Butter</td>
<td>210 pounds</td>
<td>63</td>
</tr>
<tr>
<td>Cheese</td>
<td>105 pounds</td>
<td>15</td>
</tr>
<tr>
<td>Eggs</td>
<td>150 dozen</td>
<td>32</td>
</tr>
<tr>
<td>Poultry</td>
<td>100 pounds</td>
<td>15</td>
</tr>
<tr>
<td>Beef (½)</td>
<td>250 pounds</td>
<td>36</td>
</tr>
<tr>
<td>Lamb (1)</td>
<td>40 pounds</td>
<td>7</td>
</tr>
<tr>
<td>Pork (3)</td>
<td>480 pounds</td>
<td>42</td>
</tr>
<tr>
<td>Veal (½)</td>
<td>36 pounds</td>
<td>6</td>
</tr>
<tr>
<td>Potatoes</td>
<td>20 bushels</td>
<td>9</td>
</tr>
<tr>
<td>Tomatoes</td>
<td>11 bushels</td>
<td>8</td>
</tr>
<tr>
<td>Vegetables</td>
<td>1720 pounds</td>
<td>46</td>
</tr>
<tr>
<td>Fruits</td>
<td>940 pounds</td>
<td>30</td>
</tr>
<tr>
<td>Flour and Cereals</td>
<td>700 pounds</td>
<td>11</td>
</tr>
<tr>
<td>Syrups and Honey</td>
<td>90 pounds</td>
<td>4</td>
</tr>
</tbody>
</table>

**TOTAL FARM VALUE** $376.00

**TOTAL PURCHASE VALUE** $596.00

All of the committeemen in this area recommended the planting of evergreen shelterbelts, however, there was some difference in opinion as to the need of strip farming depending on whether or not the farm was affected by wind erosion.

In general the committeemen feel that hillsides which might be affected by water erosion should be reforested rather than cropped and therefore terracing is not recommended.

**Country Life Farming**

The statement has often been made that, "Washara County is one of the finest places on earth to live and enjoy life, but it is one of the hardest places to make any money". If this statement be true it would appear that the farms in this area might be suitable for a kind of country-life farming, wherein the farmers would produce most of the food required for his family and would have some outside cash coming in, such as might be derived from teachers retirement fund, annuity, or other source.
Practically all the farms in this area as well as Area II and Area III lie on good roads which are kept open for travel the year around. Electric high-lines and telephone lines also go through these areas and could be used, making it practically desirable, from a convenience side, to live in the country as in the city.

Area II

This area has been designated as a Highly Commercial Farming Area. It is adapted to dairying, hog and beef production, and the growing of cash crops, especially potatoes.

The ease of tillage and its level topography makes this area ideal for the use of the most recently developed power-farming-rubber tire equipment. For this reason the community committeemen have recommended a rather large size of business, with over 200 crop acres per farm.

A very large proportion of this type of land is under cultivation; it is considered a good soil, and most of the farmers living upon it are in a fairly prosperous condition. The soil is comparatively easy to cultivate and no difficulty is experienced in securing a good tilth.

The chemical analysis indicates that the total phosphorus is distinctly lower on the average sandy soil, which is probably due to the fact that their higher amount of organic matter, and consequently greater original fertility, has permitted the growth of heavier crops which have removed a larger amount of phosphorus than is the case of other sandy soils. The total quantity of potassium is also low probably due to the extensive potato growing operations of the past. The total amount of nitrogen is higher than in most sandy soils, but it must be recognized that a large portion of the nitrogen now found in soils of this class, which have been farmed for a number of years, is of a resistant character and does not become available to crops readily, so that the use of barn yard manure or green manure is important.

Because of the above mentioned soil conditions this soil before it can be profitably farmed needs an application of from 2 to 4 tons of ground limestone or its lime equivalent plus 200 pounds per acre of superphosphate plus 200 pounds per acre of muriate of potash. The fertilizer applications are needed at least once during the crop rotation. Farmers living in this area who have for the past few years followed this practice are getting their farms into a higher productive state which makes it profitable for them to continue farming this land.

Wind erosion is one of the most serious problems of this area. However, Scotch pine has been found to grow quite well on this prairie soil and may be used for shelterbelt plantings every 80 rods. The most effective way to control wind erosion in this area is by strip farming. The fields should be laid out in narrow strips 20 rods or less wide and from 80 to 160 rods long. The prairie lends itself well to the highly efficient tractor-power farming because of the large level fields which are possible on this prairie.

Potatoes have for years been grown on a large scale in this area and with the improvement of the soil as has been indicated in this report, potato growing can become an even more important cash crop than has been true in the past.
By soil improvement and through the use of the latest developed potato growing machinery the growers on this prairie can favorably compete with the growers of most any other area in Wisconsin, and they have the advantage of being closely located near the market.

Area III

This area has been entitled Forestry-Hunting-Farming. Because the greatest share of the soil in this area is Plainfield, Coloma, and Waukesha sand; practically all crop growth needs to be encouraged through the use of fertilizers, thereby raising the cost of production per unit and placing these farms in an uneconomical position even at normal farm prices.

If the size of the farm is increased in line with the recommendations as has been previously mentioned in this report it would require about 360 acres, or half a section, of total land per farm. With only the better grade of land being devoted to farming it would leave one-third to one-half of the acreage of poorer soil for forestry purposes. A few examples of this type of farming are already in existence in Waushara County and the farmers are deriving practically as much income from their forested acres as they are from their acreage in farm crops. This forest cover might also be used to encourage the propagation of game birds and the unforested area which would be left as fire lines, might well be planted to crops which could be left in part unharvested for winter feed for birds.

Nearly everyone agrees that game will propagate in a direct proportion to the amount of cover and food that is available in an area, and it was also commonly agreed that hunters will be attracted to good hunting grounds and that they are not reluctant to help pay the bills if they can enjoy the desired experience. A definite plan of farmer remuneration should be worked out.

A development along this line will, of course, require promotion either by Public or Private interest. It is our opinion that the local municipalities or the county should take the leadership in this development.

If the farmers living in this area could be provided with at least 1,000 hours of labor annually at the "going" rates during the fall, winter, and spring months of the year, rapid progress could be made at the above described development and the income from this outside labor would pay most of the out-of-pocket living expenses which in turn would relieve the farmers of the necessity of attempting to grow cash crops.

In other words, agriculture in this area would be most prosperous if each farmer could produce enough food on his farm for his own use and then obtain his money for the out-of-pocket expenses from the above mentioned outside employment.

By mixing the farms and forests we do not obtain the effects which might be desired in a primeval forest but we do lessen the danger of the entire area being destroyed by fire. It may be argued that these farmers living in this future forest area would increase the fire hazard. This cannot be substantiated from the records, and, moreover, this could be guarded against by the municipalities establishing fire regulations and by owning the necessary fire fighting equipment, and by requiring each farmer to be prepared to fight fire.
The revenue for the development of an ideal hunting and forest area might be derived from two sources:

1. The income from the forest crop law.
2. The income from a fee schedule which those enjoying hunting in that area would be required to pay.

Eventually the farmers in this area would have less developed work, but the revenue from the sale of pulp would then be forthcoming; and hunting fees might be continued and divided on a pro-rated basis to the farmers in the area.

Irrigation

Approximately half of the land in this area lies within fifteen feet of the water table and it may be possible through research to develop a practical irrigation system for many of the farms in this area. If this were possible it would completely revise the above mentioned long time plans.

Irrigation together with fertilization and power equipment might again make this level easily worked sandy soil one of the important potato growing areas of the state, as it once was.

VIII
EXTERNAL ECONOMIC PROBLEMS
(Solution Needed)

Because of the shortness of time involved in preparing this report it has been impossible for the committee to give due consideration to those external economic problems which they know affect their farming operations.

The committee recommends that a subcommittee be selected to give further thought to the problems which are listed herewith which the committee feels need solution before the good farms of Waushara County can again be operated in line with the objectives set forth in the Foreword of this report.

1. Farm indebtedness too high compared with net income. -- example (Federal Land Bank Delinquency).
2. Need for consolidation of production loaning agencies.
3. Unbalanced price level - Farmers pay 120% pre-war prices for commodities purchased and receive only 89 per cent of pre-war prices for commodities sold according to July 1, 1939 figures published by Bureau of Agricultural Economics U.S.D.A.
4. Farm machinery prices too high for individual farmer to own needed equipment. Need cooperative ownership or custom use of special machinery.
WAUSHARA COUNTY GROWING SEASON RAINFALL
20 Year Annual Averages Showing Variation from Normal
(Records taken from Hancock Experiment Station)

Normal as given in monthly U.S. Weather Bureau report.

TEMPERATURE CAUSING DROUGHTS
(Records taken from Hancock Experiment Station)
Showing days - Temperature over 96°
### RELIEF AIDS

<table>
<thead>
<tr>
<th>Village</th>
<th>Plains</th>
<th>Oasis</th>
<th>Rose</th>
<th>Springwater</th>
<th>Saxeville</th>
<th>Bloomfield</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hancock</td>
<td>$8,575.16</td>
<td>$3,495.23</td>
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<td>Deerfield</td>
<td>$10,709.01</td>
<td>$6,671.79</td>
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<td>Wautoma</td>
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<td>$853.61</td>
<td>$1,630.06</td>
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**Total - $115,939.87**

- Direct Relief
- Subsistence
- Hospitalization
- Old Age
- W.P.A.

### FARM TENANCY PER CENT

<table>
<thead>
<tr>
<th>Village</th>
<th>Plains</th>
<th>Oasis</th>
<th>Rose</th>
<th>Springwater</th>
<th>Saxeville</th>
<th>Bloomfield</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hancock</td>
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</tr>
<tr>
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<td>Mt. Morris</td>
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</tr>
<tr>
<td>Leon</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>Foy Sippi</td>
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<tr>
<td>Coloma</td>
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<tr>
<td>Richford</td>
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</tr>
<tr>
<td>Dakota</td>
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<tr>
<td>Marion</td>
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<td>Warren</td>
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<tr>
<td>Aurora</td>
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</table>

- Vacant
- Share Rent
- Cash Rent
- Owner-Operator
## Trend and Size of Farm Business

<table>
<thead>
<tr>
<th>Category</th>
<th>1860</th>
<th>1910</th>
<th>Today</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total number of Farms</td>
<td>1,105</td>
<td>2,622</td>
<td>2,396</td>
</tr>
<tr>
<td>Average acres per Farm</td>
<td>125</td>
<td>140</td>
<td>147.6</td>
</tr>
<tr>
<td>Improved acres per Farm</td>
<td>40</td>
<td>86</td>
<td>87</td>
</tr>
<tr>
<td>Average acres Woodland per Farm</td>
<td>74</td>
<td>39</td>
<td>32</td>
</tr>
<tr>
<td>Average Population per Square Mile</td>
<td>13.7</td>
<td>26.3</td>
<td>22.5</td>
</tr>
<tr>
<td>Number Farms operated by Tenants</td>
<td></td>
<td>374</td>
<td>408</td>
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<tr>
<td>Number Farms Free from Mortgage Debt</td>
<td></td>
<td>1,040</td>
<td>1,316</td>
</tr>
<tr>
<td>Number Farms Mortgaged</td>
<td></td>
<td>1,179</td>
<td>1,080</td>
</tr>
<tr>
<td>Average Mortgage per Farm</td>
<td></td>
<td>1,500</td>
<td>3,360</td>
</tr>
<tr>
<td>Average Value Land and Buildings</td>
<td>1,026.50</td>
<td>6,434.33</td>
<td>4,845.00</td>
</tr>
<tr>
<td>Average Value of Farm Machinery</td>
<td>51.70</td>
<td>288</td>
<td>756</td>
</tr>
<tr>
<td>Number Dairy Cows per Farm</td>
<td>2.2</td>
<td>6.0</td>
<td>8.0</td>
</tr>
<tr>
<td>Number Sheep per Farm</td>
<td>2.0</td>
<td>1.8</td>
<td>.6</td>
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<tr>
<td>Number Swine per Farm</td>
<td>3.8</td>
<td>7.0</td>
<td>4.0</td>
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<tr>
<td>Number Hens per Farm</td>
<td>50</td>
<td></td>
<td>83</td>
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<tr>
<td>Total Acreage of Alfalfa</td>
<td></td>
<td>35</td>
<td>27,093</td>
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<tr>
<td>Total Acreage of Clover</td>
<td></td>
<td>2,516</td>
<td>12,580</td>
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<tr>
<td>Total Acreage of Wild Grass</td>
<td>12,202</td>
<td>12,264</td>
<td>15,880</td>
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<tr>
<td>Total Acreage of Potatoes</td>
<td>21,599</td>
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<tr>
<td>Total Bushels of Potatoes</td>
<td>65,178</td>
<td>2,255,887</td>
<td>568,060</td>
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<tr>
<td>Total Acres of Rye</td>
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<td>22,699</td>
<td>24,910</td>
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<tr>
<td>Total Bushels of Rye</td>
<td>33,337</td>
<td>231,430</td>
<td>249,480</td>
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<tr>
<td>Total Acres of Buckwheat</td>
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<td>1,131</td>
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<tr>
<td>Total Bushels of Buckwheat</td>
<td>444</td>
<td>10,675</td>
<td>9,680</td>
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<tr>
<td>Total Acres of Wheat</td>
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<td>337</td>
<td>740</td>
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<tr>
<td>Total Bushels of Wheat</td>
<td>142,855</td>
<td>4,704</td>
<td>13,200</td>
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<tr>
<td>Total Acreage of Corn</td>
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<td>26,990</td>
<td>31,570</td>
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<tr>
<td>Total Bushels of Corn</td>
<td>130,539</td>
<td>619,433</td>
<td>1,012,680</td>
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<tr>
<td>Total Acres of Oats</td>
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<td>27,279</td>
<td>19,860</td>
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<tr>
<td>Total Bushels of Oats</td>
<td>61,560</td>
<td>544,433</td>
<td>534,960</td>
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<tr>
<td>Total Acres of Barley</td>
<td></td>
<td>1,151</td>
<td>1,790</td>
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<tr>
<td>Total Bushels of Barley</td>
<td>27,274</td>
<td>50,540</td>
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<tr>
<td>Average Butter Production per Farm</td>
<td>268</td>
<td>754.7</td>
<td>889.6</td>
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<tr>
<td>Average Cheese Production per Farm</td>
<td>7.4</td>
<td>59.4</td>
<td>521.5</td>
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<tr>
<td>Total Whole Milk Production (gallons)</td>
<td>7,795,969</td>
<td>10,223,712</td>
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